

REMARKS:

Applicants, their principal representatives in Germany, and the undersigned have carefully reviewed the first Office Action of June 16, 2010, in the subject U.S. patent application, together with the prior art cited and relied on in the rejection of the claims. In response, the Substitute Specification, drawings and claims of the application, as filed, have been amended. It is believed that the claims which are now pending in the subject patent application are patentable over the prior art cited and relied on in the rejection of the claims.

As is set forth in the Substitute Specification, as depicted in the drawings, and as recited in the claims that are currently pending, the subject invention is directed to a printing installation which is usable to print on webs of material, as these webs pass through the printing apparatus or installation 01. As may be seen in Fig. 2, for example, a first section 02 of the printing installation 02 includes a series of individual printing units 09. A web 06 to be printed is pulled off a roll changer 07, is conditioned or has its tension regulated in a web conditioning device 08, and is directed through the plurality of printing units 09. Once the web has been printed, it is directed to a drying installation 13 and is turned 90°, all as depicted in Fig. 2, in a second section 03 of the printing installation 01. The printed, dried web is then directed to a third section 04, as seen in either Fig. 4 or Fig. 5, where it is folded. Fig. 5 shows the provision of a longitudinal fold former that is not present in Fig. 4.

In the subject device, as seen most clearly in Fig. 6, each printing unit 09a includes a printing unit frame 23. The frame 23 is able to receive a number of different interchangeable modules such as the one depicted at 24 in Fig. 6. Each such

interchangeable module 24 has at least one forme cylinder 26 and one transfer or blanket cylinder 27. In the module depicted in Fig. 6, there are two cooperating sets of forme cylinders 26 and transfer cylinders 27. Each interchangeable module is removably supported in the printing unit frame 23 so that one module 24, with its forme cylinder or cylinders, and its transfer cylinder or cylinders, can be replaced by another interchangeable module having forme and transfer cylinders of different diameters. This will allow the individual printing units 09 to be capable of printing signatures or printed sections of different lengths.

Each printing unit 09 has an inking unit 28 and a dampening unit 29 that is supported by the printing unit frame 23. While ink application rollers and dampening fluid application rollers may be supported in the individual modules, the bulk of the inking unit 28 and the dampening fluid unit 29 are supported in the printing unit frame 23, not in the individual, interchangeable modules 24. This reduces module costs and simplifies the structure and operation of the printing installation 01.

Turning now to Fig. 17, the longitudinal web, after it has been printed with a print section length that is a function of the diameter and circumference of the forme cylinder or cylinders and the transfer cylinder or cylinders in each one of the interchangeable modules 24, it is then cut into signatures. As may be seen in Fig. 17, there is depicted a variable folding apparatus 21a that is usable to transversely cut and to transversely fold the sections of the web whose print section lengths are a function of the specific one of the interchangeable modules which has been placed onto the printing units 09a of the printing installation 01.

As the web 06 enters the variable folding apparatus, it is cut transversely into

individual sections having the print section length that was printed by the selected one of the interchangeable modules 24. A cutting roller pair 42 accomplishes this variable length cutting. The individual signatures are accelerated by suitable belts 43 and are directed to a collection cylinder 44. This collection cylinder is provided with a pair of supports. One of these supports carries grippers for the leading ends of the signatures. The other carries folding blades that push the midpoint length of each system into a folding jaw on a cooperating folding jaw cylinder 46. The gripper support and the folding blade support, which together form the collecting cylinder 44, are shiftable circumferentially with respect to each other. Since the folding blade will typically engage each signature at its midpoint to fold it transversely at its center, when the print section length of a signature varies, because of a change in the print module 24, the spacing between the gripper support and the folding blade support of the collecting cylinder 44 has to shift circumferentially with respect to each other.

As is discussed in paragraph 035 of the Substitute Specification, positionally regulated, electric servo motors 47 are provided and are used to drive the various functional elements of the folding apparatus 21a. Such positionally regulated, servo controlled motors allow for the changing of the locations of the two supports of the collection cylinders 44 in accordance with the print section length that is being printed. As is discussed in paragraph 036 of the Substitute Specification, the distance between the sheet leading end grippers on one support of the collecting cylinder 44 and the folding blades on the other support of the collecting cylinder 44 can be set as a function of the diameter of the forme cylinder in the particular interchangeable module. This can be done by using a control device, such as, for example, a remote control device. Such

a remote control device is depicted schematically at 80 in Fig. 17.

In the first Office Action of June 16, 2010, claims 72 and 73 were objected to as being dependent on claims that had been cancelled. In response, both of claims 72 and 73 have been amended to now depend from claim 70.

Claim 79 was objected to as being a double recitation of a folding blade cylinder which had already been recited in claim 69. In response, claim 79 has been cancelled.

Claims 90, 99-102, 105 and 106 were objected to because it was asserted that it is not clear that the specification teaches inking and dampening systems in the modules. Claim 90 has been cancelled. Claims 99-102, 105 and 106 have been amended. Claim 94 was objected to and has now been cancelled. Claims 69, 88 and 107 were objected to because it was asserted that the recitation of a positionally controlled motor, or a positionally regulatable motor, was unclear. It was asserted that the specification does not assert that the motor is movable or what position might be used to regulate the motor. As will be discussed, the position of the motor does not change. The motor is positionally controlled. This means that the rotational position of the motor's rotor, with respect to the stator, can be controlled. This is how the positions of the two supports of the collecting cylinder are controlled. The specification has been amended slightly to add the language of the claims in order to rectify the assertions of informalities raised by the Examiner.

The drawings were objected to as not showing every feature of the invention specified in the claims. In response, the Substitute Specification and various ones of the drawings have been revised. It is believed that these changes, as will be discussed below, overcome the objections to the drawings and do not add any new matter.

Claims 69-74, 79, 80, 82, 84-88, 90, 91, 97-102, 110-112, 116-118, 121, 127 and 131-134 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent No. 3,877,370 to Hantscho in view of EP 0257390 to Kepert. Claims 75-77 were rejected under 35 U.S.C. 103(a) over Hantscho in view of Kepert and further in view of U.S. patent No. 5,676,056 to Stein. Claim 78 was rejected under 35 U.S.C. 103(a) over Hantscho in view of Kepert and further in view of U.S. patent No. 6,689,041 to Lanyin. Claims 81, 122-126 and 130 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of U.S. patent No. 6,899,026 to Weis. Claims 83, 95 and 96 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of U.S. patent No. 5,718,172 to Ruchmann. Claims 81, 122-126 and 130 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of an unspecified reference to Ruchmann. It is unclear from the Office Action if this is the same Ruchmann reference relied on in the rejection of claims 83, 95 and 96. Claims 89 and 94 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert, and further in view of U.S. patent No. 6,539,867 to Weschenfelder. Claim 98 was rejected under 35 U.S.C. 103(a) over Hantscho in view of Kepert and further in view of U.S. patent No. 6,612,234 to Hess. Claims 93, 103 and 119 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of U.S. patent No. 4,887,531 to Ichikawa. Claims 104-107 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of U.S. PGPUB 2004/0231536 to Gerner. Claims 108 and 109 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert

and further in view of U.S. patent No. 2,350,580 to Blackley. Claims 113-115 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of GB 1375273 to Rombout. Claim 120 was rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of U.S. patent No. 6,209,454 to Christmann. Claims 128 and 129 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hantscho in view of Kepert and further in view of U.S. patent No. 5,638,752 to Hartung.

It is appreciated that there are a large number of diverse dependent claims in the subject application and that it was necessary for the Examiner to locate art that is arguably applicable to each of the features recited in the various dependent claims. In an effort to expedite the prosecution of this application, the bulk of the following discussion will be directed to the patentable differences that are believed to exist between the two independent claims 69 and 88 and the prior art that was cited in their rejection. Once it can be agreed that the independent claims are patentable, the additional dependent claims will also be seen as being patentable.

Claim 69 has been amended to more clearly recite that there are at least first and second printing unit modules which are provided with forme cylinders and transfer cylinders of different diameters. The result is that each printing unit module is usable to print a web of material with a printing unit module print section length. Since the cylinder diameters of different modules are different from each other, the printing unit module print section lengths are different from each other. The modules, generally at 24 in Fig. 2, are interchangeable in a printing press frame 23 that is adapted to selectively receive one of the modules.

As is recited in currently amended claim 69, each module has its own drive motor. This is described at paragraph 026 of the Substitute Specification. It is to be noted that the paragraph of the Substitute Specification has been amended to now recite that each such cylinder pair is provided with the previously recited drive motor. Such drive motors have been identified as drive motors 68; 70, respectively, for cylinder pairs 26; 87. Fig. 6 of the drawings has been amended to schematically depict these drive motors, 68; 70. This assigning of reference numerals to the cylinder pair drive motors, and the depiction of those drive motors in Fig. 6 of the drawings, is believed not to raise any issues of new matter. Paragraph 026 of the Substitute Specification, as filed, clearly recites the existence of such drive motors.

Claim 69 further recites the provision of at least one folding apparatus that has a folding apparatus section length which is changeable. This structure is shown more cleanly in Fig. 17 and is described in paragraph 035 of the Substitute Specification. Claim 69 recites that the folding apparatus has at least one positionally regulatable drive motor that is usable to drive the folding apparatus. As was discussed above, such a motor is not one whose physical position is changed. The motor itself is not shifted in the folding apparatus. Instead, as recited in paragraph 037, it is an electric servo motor. In each motor, the angular position of the rotor of the motor can be controlled with respect to the position of the stator. This is what allows the electric motors 47 to drive the various functional elements of the folding apparatus. The use of such positionally regulated motors allow the folding blade cylinder 44 of the folding apparatus to have at least three cylinder leading end gripper systems and at least three associated folding blades. As recited in amended claim 69, these holding systems and

folding blades are changeable in response to the specific printing unit module print section length. This is done in response to the selective securement of one of the printing unit modules in the printing press pair.

Claim 69 was rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent No. 3,877,370 to Hantscho in view of EP 0257390 to Kepert. It was asserted that Hantscho shows a printing unit with modules having cylinders of different diameters and being usable to print webs of material with variable print section lengths. It was also asserted that Hantscho describes a printing press frame adaptable to selectively receive one of the at least first and second printing unit modules.

It was acknowledged that the Hantscho reference does not teach or suggest a folding apparatus unit having a folding apparatus section length that is variable. Further, Hantscho was acknowledged as not having a positionally regulatable drive motor for the folding apparatus, means for separating the web into signatures having variable print section lengths and a folding blade and holding apparatus in which the spacing distances between the two was variable in accordance with the variable print section length. It was asserted that Kepert discloses all of those features missing from the Hantscho reference. For the reasons to be set forth below, the undersigned respectfully disagrees.

Initially, the Examiner's discussion of the Hantscho reference is not disagreed with. Hantscho does disclose printing units 12 with bases 18 and interchangeable printing heads 19. It is to be noted that each such printing head 19 includes its own associated ink and water supply means, as discussed at column 1, line 41. That is different from the arrangement of the subject device, as recited in various ones of the

dependent claims.

It is to be noted that Hantscho is quite different from the subject invention in its provision of a drive arrangement for the interchangeable head units. As is recited at column 3, lines 5-12 of Hantscho, there is provided one common drive for the web in-feed unit 10, the press units 12-16 and the dryer 17. A gear 24 is provided for each press unit and that gear 24, which is depicted in Fig. 2 as being situated beneath the counter-pressure or pressure roller 22, is usable to drive all of the rollers in each one of the replaceable heads 19. Fig. 2 also shows that each replaceable head 19 includes its own inking unit 27 and its own dampening unit 28.

The secondary reference to Kepert, EP 0257390, was cited to teach all of the features of independent claim 69 that are not found in the Hantscho reference. It is submitted that Kepert does not disclose or teach those features of claim 69, as filed, and even more clearly as amended for the following reasons. It is initially to be noted that the Kepert document is cited in the specification of the subject application, at paragraph 035 thereof. This prior art device is assigned to a subsidiary of the assignee of the subject application. It is clearly a structure of which the present inventors are aware. It is cited as showing a variable 7:7 folding apparatus with seven gripper systems, seven folding blades and seven folding jaws. However, a careful review of the English language abstract of the secondary Kepert reference fails to support the Examiner's discussion of the teachings of this reference.

In the Kepert reference, there is depicted a folding device that includes a longitudinal fold former 2, a transverse cutting device 7, a collection cylinder 19 and a folding jaw cylinder 23. It is to be noted that the transverse cutting device 7 is able to

be reset from a first cutting length to a second cutting length that is half as long as the first. In other words, the web that is to be formed and folded can be cut transversely into a first length or a second length. The first length is twice as long as the second.

Now referring to the discussion of the collection cylinder and the folding jaw cylinder, it is to be noted that each of these cylinders is provided with two multi-arm, relatively adjustable fixture supports. It is to also be noted that the folding jaw cylinder 23 is provided with only three folding jaws whereas it has two sets of grippers 27 which are able to be put into use as an alternative to each other or as an alternative to the folding jaws 22 carried by the cylinder.

The operation of the Kepert device is to either cut a printed web having a certain section length into sections of a whole section length and to fold these whole length sections transversely in half or to cut the web having the same certain section length into sections of a half section length, as compared to the whole section lengths and to not transversely fold those half section length signatures. Kepert would then be suitable perhaps for broadsheet or tabloid production, but would not function in a manner similar to the present invention.

It is to be noted that there is no discussion in the English language Kepert document of any drive motor, let alone a positionally regulatable drive motor, as asserted by the Examiner. There is no doubt that Kepert uses drive motors, but there is no discussion of a positionally regulatable drive motor. It is quite probable that the positions of the fixture supports in Kepert, as well as the cutting lengths provided by the transverse cutting device 7, are set manually.

Claim 69 of the subject application, as amended, recites that the means for

separating the printed web into signatures does so to provide signatures each having the variable section length in response to the selective securement of the selected one of the printing modules to the press frame. Hantscho does not discuss any type of folding structure. While it describes replaceable heads 19 with different print section lengths, it does not discuss any downstream cutting or folding of the printed signatures. Kepert teaches that a web can be cut either into full length signatures or into half length signatures. There is no discussion in Kepert that such signatures could have a variable length. There is no discussion in Kepert that the selection of the signature length would be a function of the selective securement of one of first and second printing unit modules in the printing press frame. It does not appear that Kepert is usable with the Hantscho patent. The Kepert signature length is either a whole signature or half of a signature. The folding blade cylinder either uses every other gripper, with a full length signature, or uses every gripper, with a half length signature. There is no discussion in Kepert of any variation in either the means for separating the web into signatures or the setting a distance of the gripper and folding blades of the collection cylinder at particular lengths as a function of selective securement of one of the at least first and second printing unit modules. In Kepert, the collection cylinder and the folding jaw cylinder are adjusted or changed essentially in response to whether or not a printed web, having a particular signature length, is allowed to pass to the collecting cylinder and to the folding jaw cylinder as a full length web so that it is folded as a broadside newspaper, or is allowed to pass to the collecting cylinder and is merely transferred to the folding jaw cylinder and has more of the size of a tabloid publication. For all of those reasons, it is believed that independent claim 69, as it is currently amended, is not rendered

unpatentable by the combination of the Hantscho and Kepert references.

Referring now to independent claim 88, it is also believed that the Hantscho and Kepert references do not render this device obvious to one of skill in the art. Claim 88 recites the provision of at least one printing unit that is used to print a printed section on a web. That printed section has a printed section length which is variable. The at least one printing unit has a forme cylinder and a transfer cylinder. As was the case with currently amended claim 69, claim 88 has been amended to recite that there is a separate drive motor for the forme cylinder and the transfer cylinder in the at least one printing unit. In contrast, as was also discussed in connection with claim 69, the Hantscho reference clearly recites that there is provided only one common drive which is usable to drive all of the press units 18. Such a common drive, which is not shown in Hantscho, is assumed to be a single elongated shaft that extends the entire length of the entire assembly depicted in Hantscho. Such a master drive shaft is used to drive the drive gear 24 which is situated in each base 18. This is clearly not the same as, or similar to, the structure of the subject invention, as recited in paragraph 026 of the Substitute Specification, as filed and as amended, and shown in replacement Fig. 6 of the drawings.

Claim 88, as amended, also recites that the folding apparatus has a folded section length which is variable in accordance with the printed section length that is provided by the at least one printing unit. Again, as was discussed in connection with claim 69, the device of the Kepert reference does not disclose, or suggest, the existence of a variable section length. It teaches that the printed sections can be cut into either full length sections or into half length sections. There is no teaching in

Kepert of varying a folded section length in the folding cylinder or collection cylinder to accommodate folded signatures of different lengths. In Kepert, in one configuration, the signatures are folded in half. In the other configuration, the printed web is cut into sections of half length but their sections are not cross-folded. Thus, in the Kepert device, there is no folded section length that is variable in accordance with the printed section length that is printed on the web of material.

Claim 88 of the subject application further recites the provision of a folding blade cylinder having a holding system and a folding blade. A control device is usable to set a distance between the holding system and the folding blade of the folding blade cylinder as a function of the printing section length and in accordance with the diameter of the one of the forme cylinder and the transfer cylinder by remote control.

The remote control aspect of the device recited in claim 88 is set forth in paragraph 036 of the Substitute Specification. As was discussed above, that paragraph has been amended to include a reference numeral for the disclosed remote control unit. Fig. 17 of the replacement drawings has also been amended to show the reference numeral of the remote control recited in claim 88. There is no teaching or suggestion in Kepert of any corresponding structure. At best, Kepert teaches that the positions of the two supports 24 and 25 of the collecting cylinder 19 and the two supports 26 and 27 of the folding jaw cylinder 23 are able to be varied in accordance with the positioning of the transverse cutting device. There is no disclosure of the subject device, as recited in currently amended claim 88.

For the reasons set forth above, it is believed that independent claims 69 and 88 are patentably different from the prior art cited and relied on in these rejections, taken

either singly or in combination. The numerous references cited to show individual features of various ones of the dependent claims have been reviewed. It does not appear to the undersigned that these individual disclosures supply the teachings of the subject invention, as set forth in independent claims 69 and 86, that are missing from the Hantscho and Kepert references. The dependent claims are thus also believed to be allowable.

The references cited by the Examiner in the Office Action of June 16, 2010, but not relied on in the rejections of the claims, have been noted. Since they were not applied in the rejections, no further discussion thereof is believed to be necessary.

SUMMARY

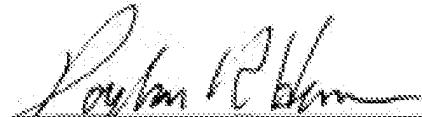
The Substitute Specification and various ones of the drawings have been amended to overcome objections raised by the Examiner and to add suitable reference numerals and discussion. These various changes do not constitute any new matter. Their entry is respectfully requested.

Independent claims 69 and 88, as well as various ones of the dependent claims, have been amended. It is believed that the claims which are now pending in the subject application are patentable over the prior art cited and relied on, taken either singly or in combination. Allowance of the claims and passage of the application to issue is respectfully requested.

Respectfully Submitted,

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September 15, 2010

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Attorney Docket: W1.2331 PCT-US